ORDER NO. MD9706053C2

Service Manual

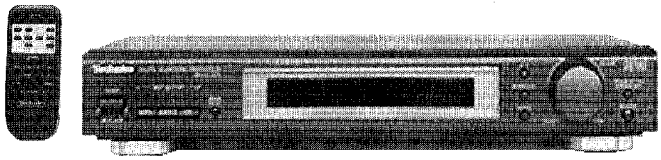
Digital Surround Processor

Processor

SH-AC300

* DOLBY DIGITAL

* DOLBY SURROUND PRO • LOGIC



Colour

(K) ... Black Type

Area

Suffix for Model No.	Area	Colour
(E)	Europe	(K)
(EB)	Great Britain	
(EG)	Germany and Italy	

* Manufactured under license from Dolby Laboratories Licensing Corporation.
"Dolby", "AC-3", "Pro Logic" and the double-D symbol are trade marks of Dolby Laboratories.

■ Specifications

■ AUDIO

Output voltage / Impedance		2 V (at 0 dB) / 1 kΩ
Input Impedance		
LINE		22 kΩ
COAXIAL		75 Ω
Frequency responce		
FRONT L/R, CENTER, SURROUND L/R (LARGE)		20 Hz - 20 kHz, ±1 dB
Delay time		
AC - 3	**CENTER**	0 - 5 ms
	SURROUND L/R	0 - 15 ms
DOLBY PRO LOGIC	**SURROUND L/R**	15 - 30 ms
Total harmonics distortion		
FRONT L/R (1 kHz, 0 dB, PCM)		0.007%
Dynamic range		90 dB
S/N (IHF A)		96 dB
Load impedance		More than 10 kΩ

■ GENERAL

Power supply	
For E, EG	AC 230 V, 50 Hz
For EB	AC 230 - 240V, 50 Hz
Power consumption	18 W (In standby condition : 7 W)
Dimensions (W x H x D)	430 x 69.4 x 301.4 mm
Weight	2.6 kg

Notes :

1. Specifications are subject to change without notice. Weight and dimensions are approximate.
2. Total harmonics distortion is measured by the digital spectrum analyzer.

■ Contents

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OERATION CHECKS AND MAIN COMPONENT REPLACEMENT	3 ~ 4
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⚠ WARNING

This service information is designed for experiense repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

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■ Caution for AC Main Leads

(For "EB" area code model only.)

For your safety, please read the following text carefully.

This appliance is supplied with a moulded three pin mains plug for your safety and convenience.
A 5-ampere fuse is fitted in this plug.
Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5-ampere and that it is approved by ASTA or BSI to BS1362.

Check for the ASTA mark ⓐ or the BSI mark ⓚ on the body of the fuse.

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.
If you lose the fuse cover, the plug must not be used until a replacement cover is obtained.
A replacement fuse cover can be purchased from your local dealer.

CAUTION !
IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET IN YOUR HOME THEN THE FUSE SHOULD BE REMOVED AND THE PLUG CUT OFF AND DISPOSED OFF SAFELY.
THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS INSERTED INTO ANY 13-AMPERE SOCKET.

If a new plug is to be fitted, please observe the wiring code as shown below.
If in any doubt please consult a qualified electrician.

IMPORTANT

The wires in this mains lead are coloured in accordance with the following code:

Blue: Neutral
Brown: Live

As these colours may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:
The wire which is coloured Blue must be connected to the terminal which is marked with the letter N or coloured Black or Blue.

The wire which is coloured Brown must be connected to the terminal which is marked with the letter L or coloured Brown or Red.

WARNING: DO NOT CONNECT EITHER WIRE TO THE EARTH TERMINAL WHICH IS MARKED WITH THE LETTER E, BY THE EARTH SYMBOL ⏚ OR COLOURED GREEN OR GREEN/YELLOW.

THIS PLUG IS NOT WATERPROOF—KEEP DRY.

Before use

Remove the connector cover.

How to replace the fuse

The location of the fuse differ according to the type of AC mains plug (figures A and B). Confirm the AC mains plug fitted and follow the instructions below.
Illustrations may differ from actual AC mains plug.

1. Open the fuse cover with a screwdriver.

Figure A

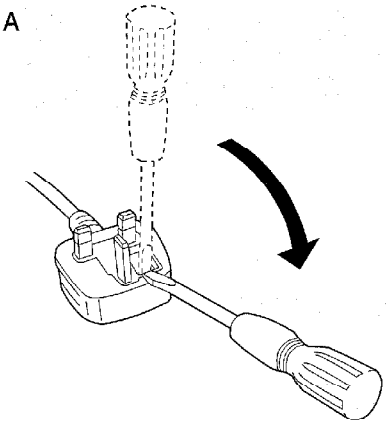
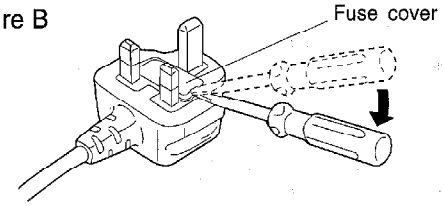


Figure B



2. Replace the fuse and close or attach the fuse cover.

Figure A

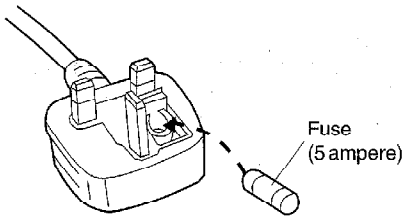
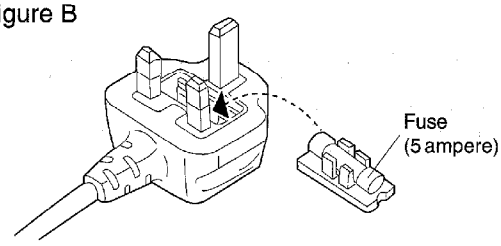


Figure B



■ Operation Checks and Main Component Replacement Procedures

" **ATTENTION SERVICER** " Some chassis component may have shape edges. Be careful when dissembling and servicing.

1. **This section describes procedures for checking the operation of the major printed circuit boards and replacing the main components.**
2. **For reassembly after operation checks or replacement, reverse the respective procedures. Special reassembly procedures are described only when required.**
3. **Select items from the following index when checks or replacement are required.**

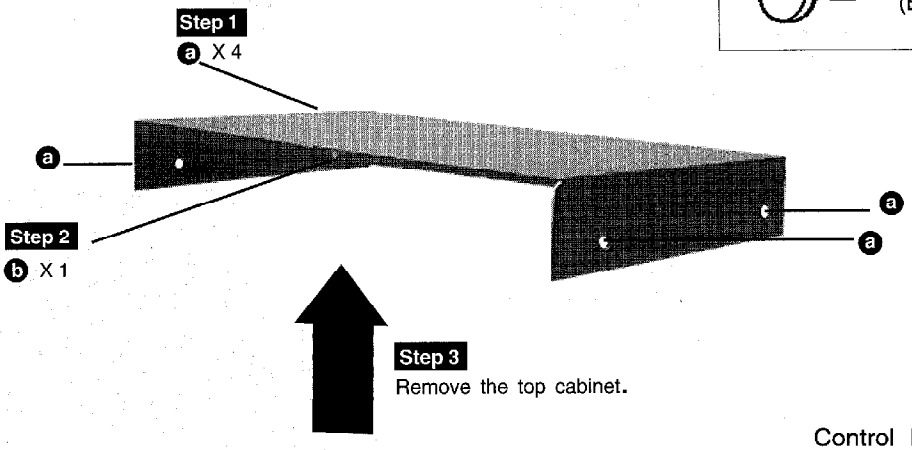
• Contents

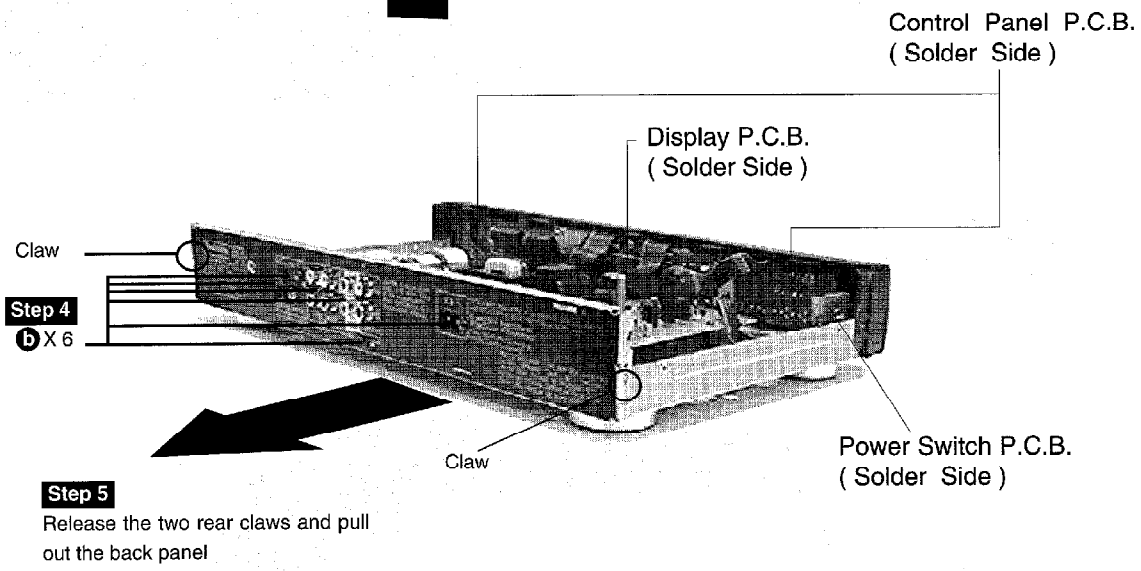
page
• Checking Procedure for each major P.C.B. ..... 3 ~ 4

■ Checking Procedure for Major P.C.B.

1. Checking of the Control , Display and Power Switch P.C.B.

[SNE2129-1] (Black) ⓐ





[XTBS3+8JFZ1] (Black) ⓑ

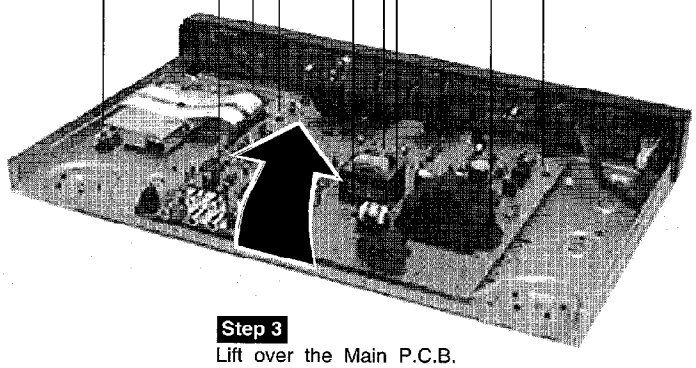
2. Checking of the AC-3 Module and Main P.C.B.

[XTBS3+8JFZ1] (Black) ⓑ

[XTB3+20JFZ1] (Black) ⓒ

Step 2
ⓑ X 1

Step 1
ⓒ X 8

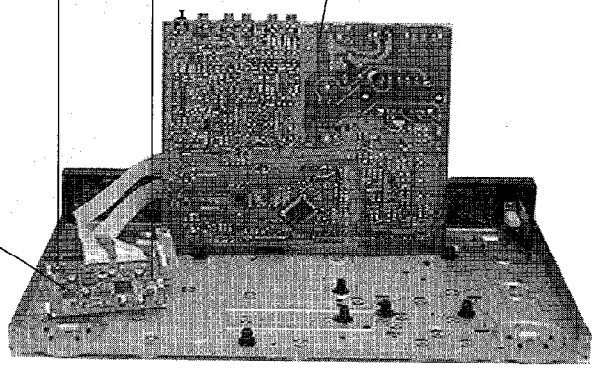


Step 3
Lift over the Main P.C.B. following the arrow direction.

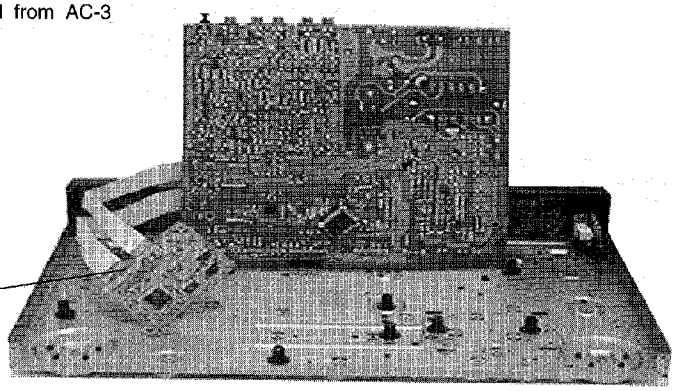
Step 5
ⓓ X 2

Main P.C.B.
(Solder Side)

Step 4
Flip over the AC-3 Module P.C.B. as shown.



Step 6
Remove the shiled from AC-3 Module P.C.B.



AC-3 Module P.C.B
(Solder Side)

[XYN26+C6] ⓓ

■ Terminal Functions Of IC's

• IC901 (M38B53M4051F) System Microprocessor

Pin No.	Mark	I/O	Function
1	XCS	O	Chip select : XLJ93LC46
2	SK	O	Serial clock : XLJ93LC46
3	DI	O	Serial data output : XLJ93LC46
4	DO	I	Serial data input : XLJ93LC46
5~6	STB1~STB2	O	Strobe (C/W) : TC9212P
7~8	RA~RB	I	Rotary encoder input A~B
9	--	I	Unused to be connected to GND
10	RESET	I	Reset input
11	CK	O	Serial clock : TC9212P
12	DATA	O	Serial data output : TC9212P
13	VSS	--	GND terminal
14	XIN	--	Crystal oscillator terminal
15	XOUT	--	(4 MHz)
16	VDD/VCC	--	Power supply terminal + 5V
17~18	DIGITAL1~2	O	Input selecter indicator LED
19	LINE	O	LINE DIRECT indicator LED
20	STANDBY	O	Standby LED
21	POWERSW	I	Mechanical power source switch reader
22	REMOTE	I	Remote control input
23	HOLD	I	Power outage detection
24	POWER	O	Power supply relay
25~27	A4053A~C	O	Analog switch (4053) control A~C
28	VEE	--	-VP
29~30	MUTEA / S	O	Software muting
31~40	DIG10~DIG1	O	FL digit output

Pin No.	Mark	I/O	Function
41~56	SEG1~SEG16	O	FL segment signal output
57	INIT	I	Initial setting diode reading input
58	--	I	Unused, connected to Vcc via resistance
59	PDN	O	Reset / power down : CS4226
60	OVLERR	I	Overflow / error : CS4226
61	FRQ0	I	Sampling frequency : CS4226
62	FRQ1	I	Sampling frequency : CS4226
63	AC3	I	AC-3 bitstream : CS4226
64	AUDIO	I	PCM audio : CS4226
65	CCS	O	Chip select : CS4226
66	CCLK	O	Serial clock : CS4226
67	CDIN	O	Serial data input : CS4226
68	CDOUT	I	Serial data output : CS4226
69	SS	O	Chip select : DSP56009
70	SCK	O	Serial clock : DSP56009 / TC9332F
71	MOSI	O	Serial data output : DSP56009 / TC9332F
72	MISO	O	Serial data input : DSP56009
73	AVSS	--	GND for A/D conveter
74	VREF	--	Reference voltage for A/D convertion
75	MRFSET	O	Reset output : DSP56009
76	IFCD	O	Command / data select : TC9332F
77	TCS	O	Chip select : TC9332F
78	TRST	O	Reset output : TC9332F
79	KEY1	A/D	Key input 1
80	KEY2	A/D	Key input 2

■ Terminal Guide of IC's, Transistors and Diodes

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 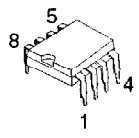
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 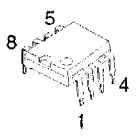
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 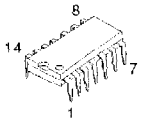
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 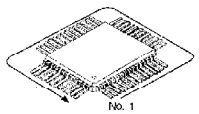
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 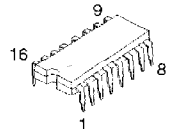
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 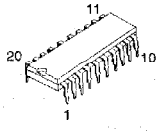
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 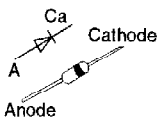
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 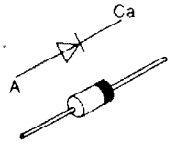
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 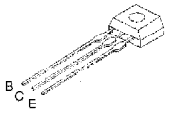
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 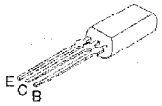
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 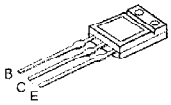
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 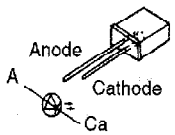
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 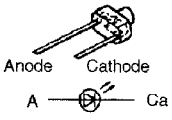
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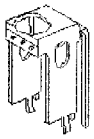
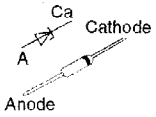
  </td>
<td> 
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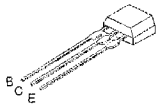
<td> 
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<td>2SA933SSTA
2SC1740SSTA
RVTDTA114EST
RVTDTA114YST
RVTDTC114YST</td>
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■ Schematic Diagram

(All schematic diagrams may be modified at any time with the development of new technology)

Note :

- **S701** : Power switch
- **S901** : Digital 1
- **S902** : Digital 2
- **S903** : Line switch
- **S904** : RE-EQ switch
- **S905** : AC-3 switch
- **S906** : Pro-logic
- **S907** : Stereo
- **S908** : Channel select
- **S909** : Speaker select
- **VR901** : Volume control

- **Signal line**

: +B line

: -B line

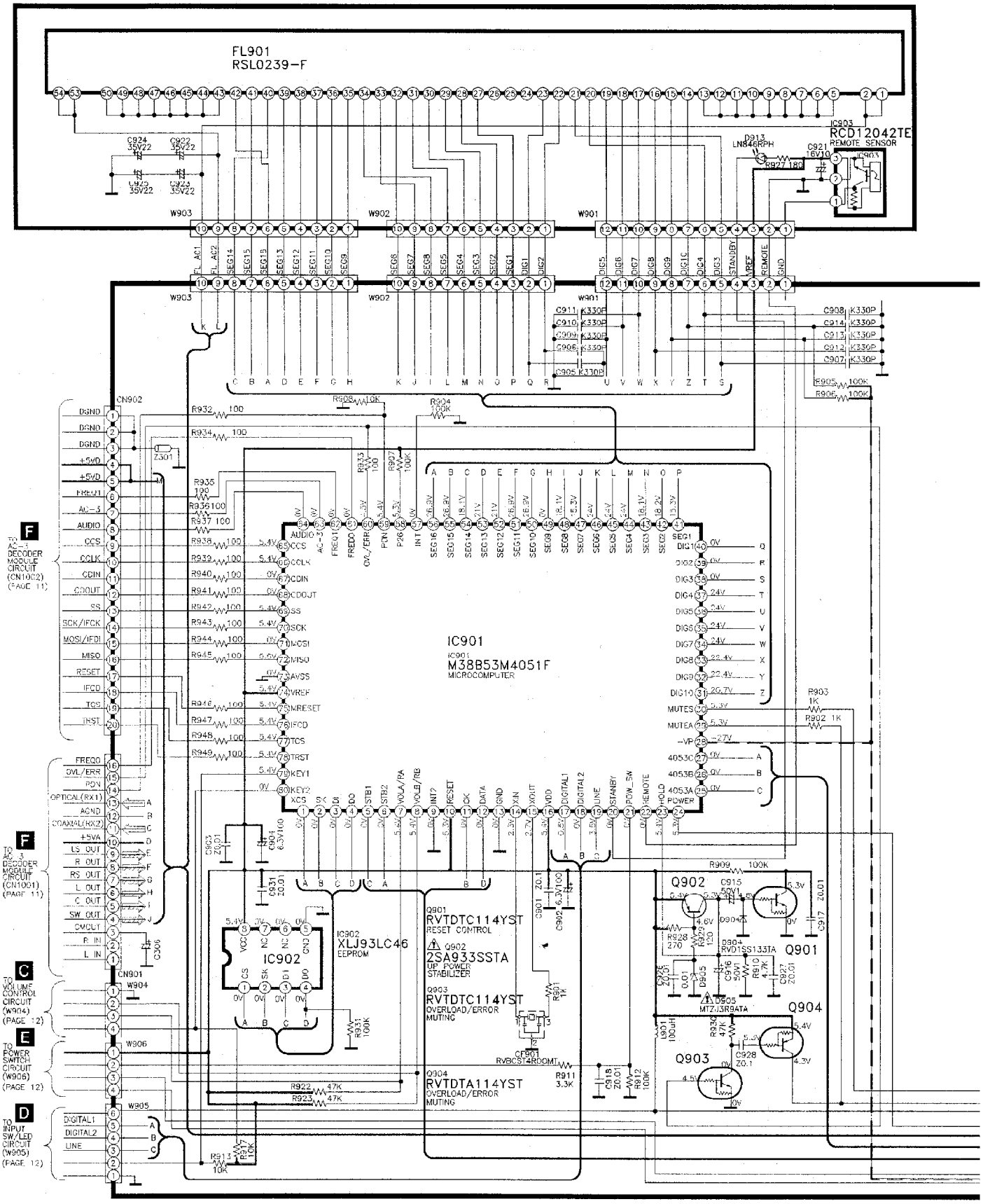
: Main signal line

•The voltage value and waveforms are the reference voltage of this unit measured by DC electronic voltmeter (high impedance) and oscilloscope on the basis of chassis. Accordingly, there may arise some error in voltage values and waveforms depending upon the internal impedance of the tester or the measuring unit.

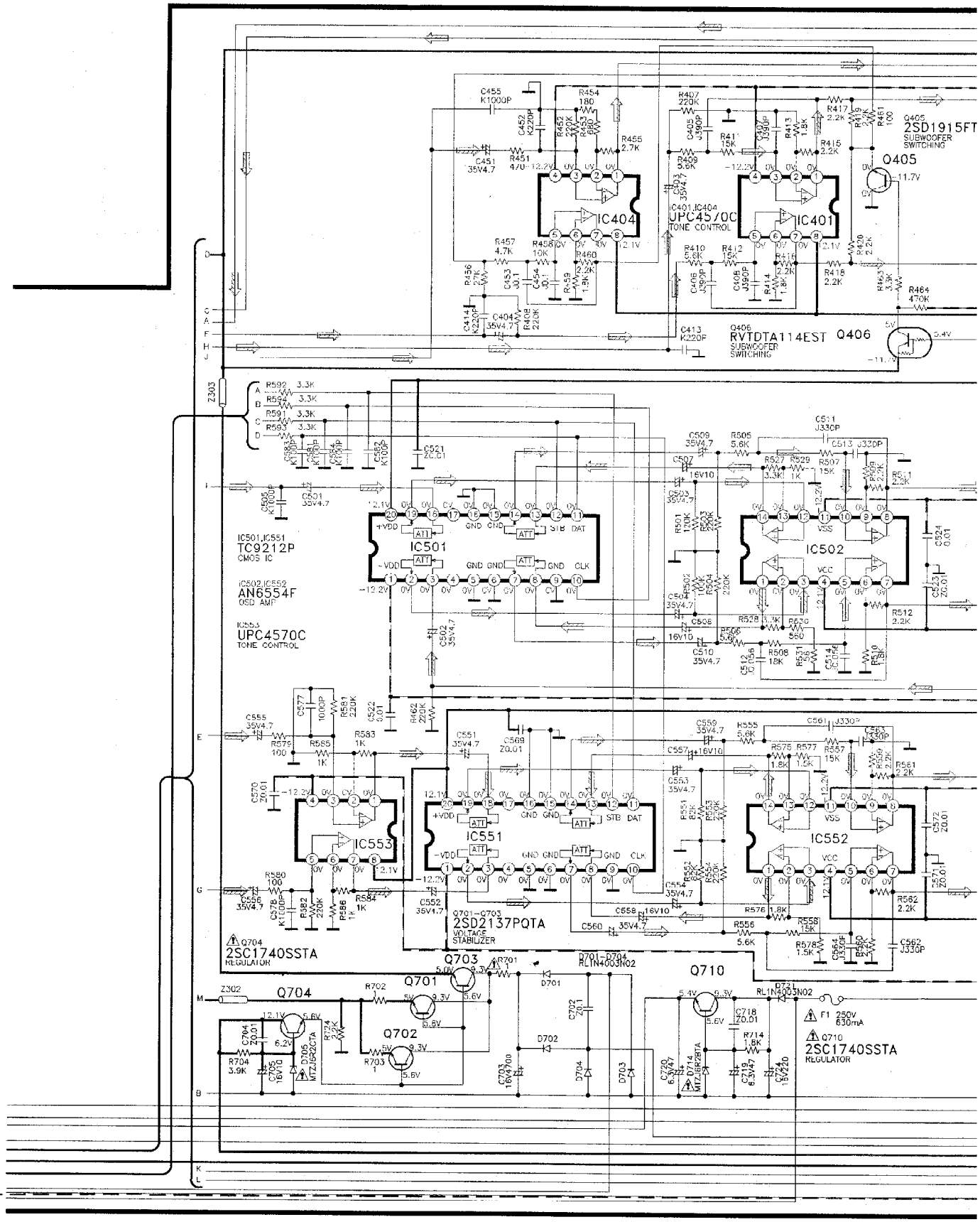
•Importance safety notice:
Components identified by ⚠ mark have special characteristics important for safety. Furthermore, special parts which have purposes of fire retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used. When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.

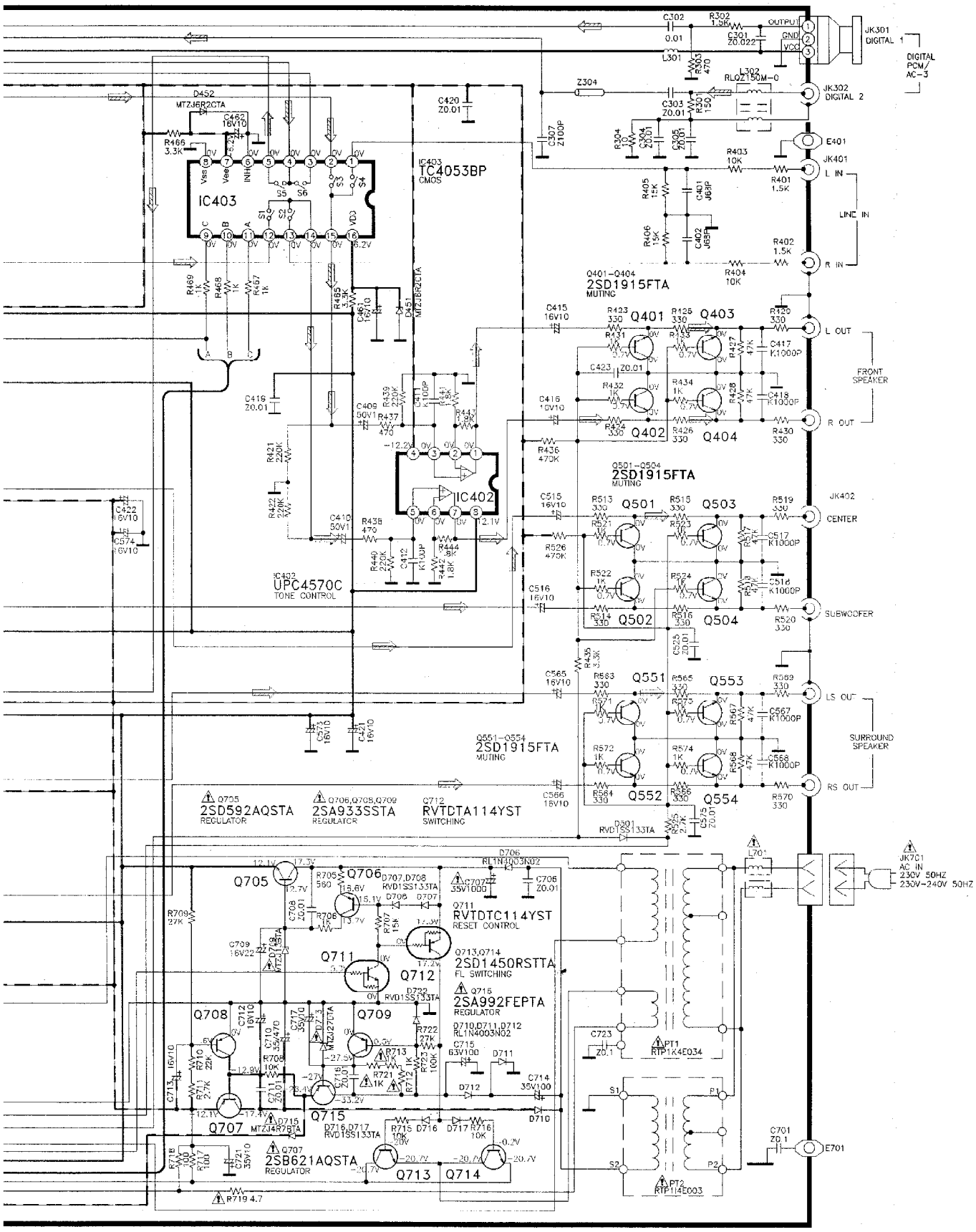
Caution !
IC, LSI and VLSI are sensitive to static electricity.
Secondary trouble can be prevented by taking care during repair.
•Cover the parts boxes made of plastics with aluminium foil.
•Ground the soldering iron.
•Do not touch the pins of IC, LSI or VLSI with fingers directly.
•Put a conductive mat on the work table.

B FL CIRCUIT


FL901
RSL0239-F
IC901
M38B53M4051F
MICROCOMPUTER
IC902
XLJ93LC46
EEPROM
IC903
RCD12042TE
REMOTE SENSOR
Q901
RVTDTC114YST
RESET CONTROL
Q902
2SA933SSTA
UP POWER STABILIZER
Q903
RVTDTC114YST
OVERLOAD/ERROR MUTING
Q904
RVTDTA114YST
OVERLOAD/ERROR MUTING
CN902
CN901
W903
W902
W901
W904
W906
W905
TO AC-3 DECODER MODULE CIRCUIT (CN1002) (PAGE 11)
TO VOLUME CONTROL CIRCUIT (W904) (PAGE 12)
TO POWER SWITCH CIRCUIT (W906) (PAGE 12)
TO INPUT SW/LED CIRCUIT (W905) (PAGE 12)

A MAIN CIRCUIT




IC403
TC4053BP
CMOS
IC402
UPC4570C
TONE CONTROL
Q401–Q404
2SD1915FTA
MUTING
Q501–Q504
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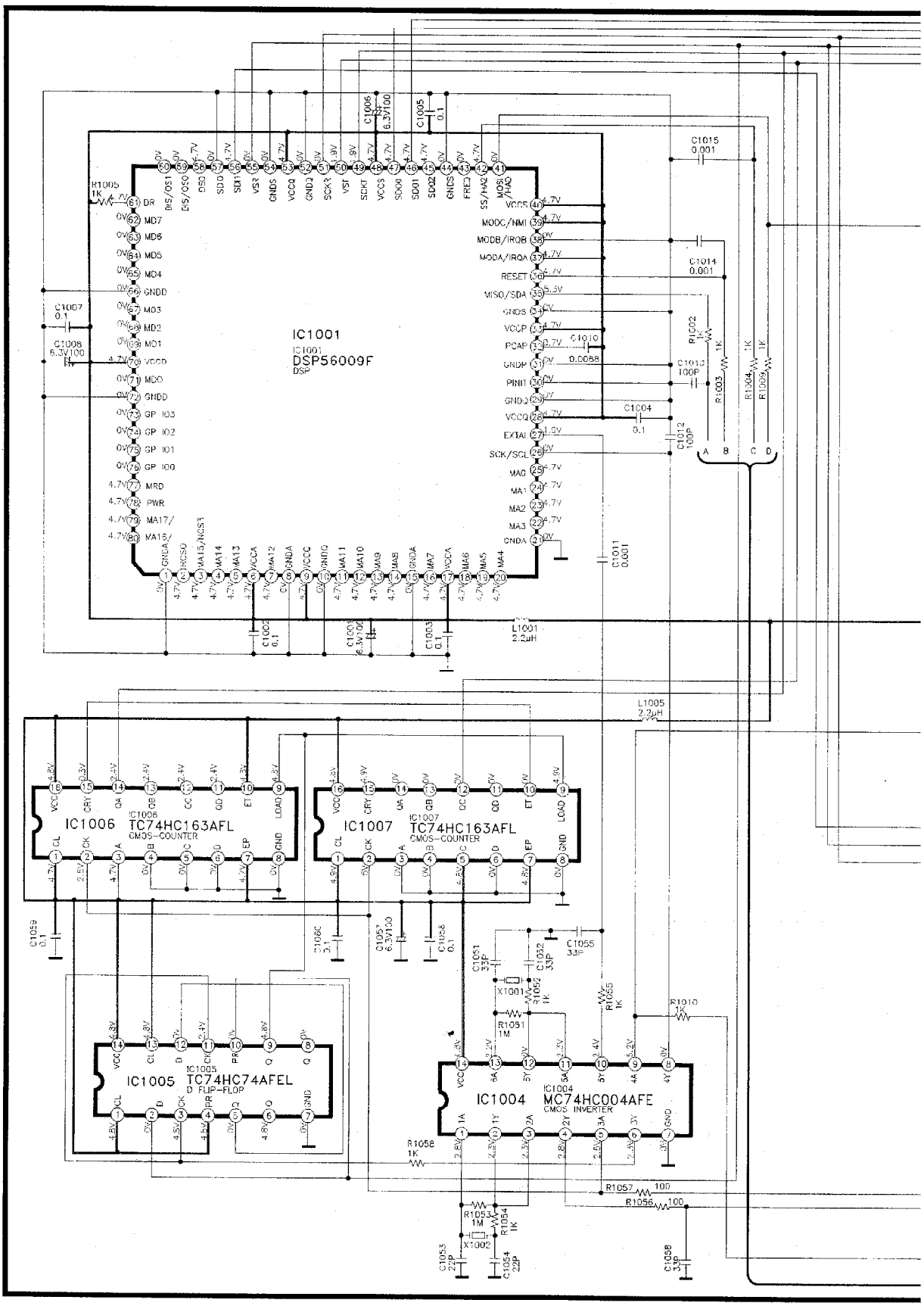
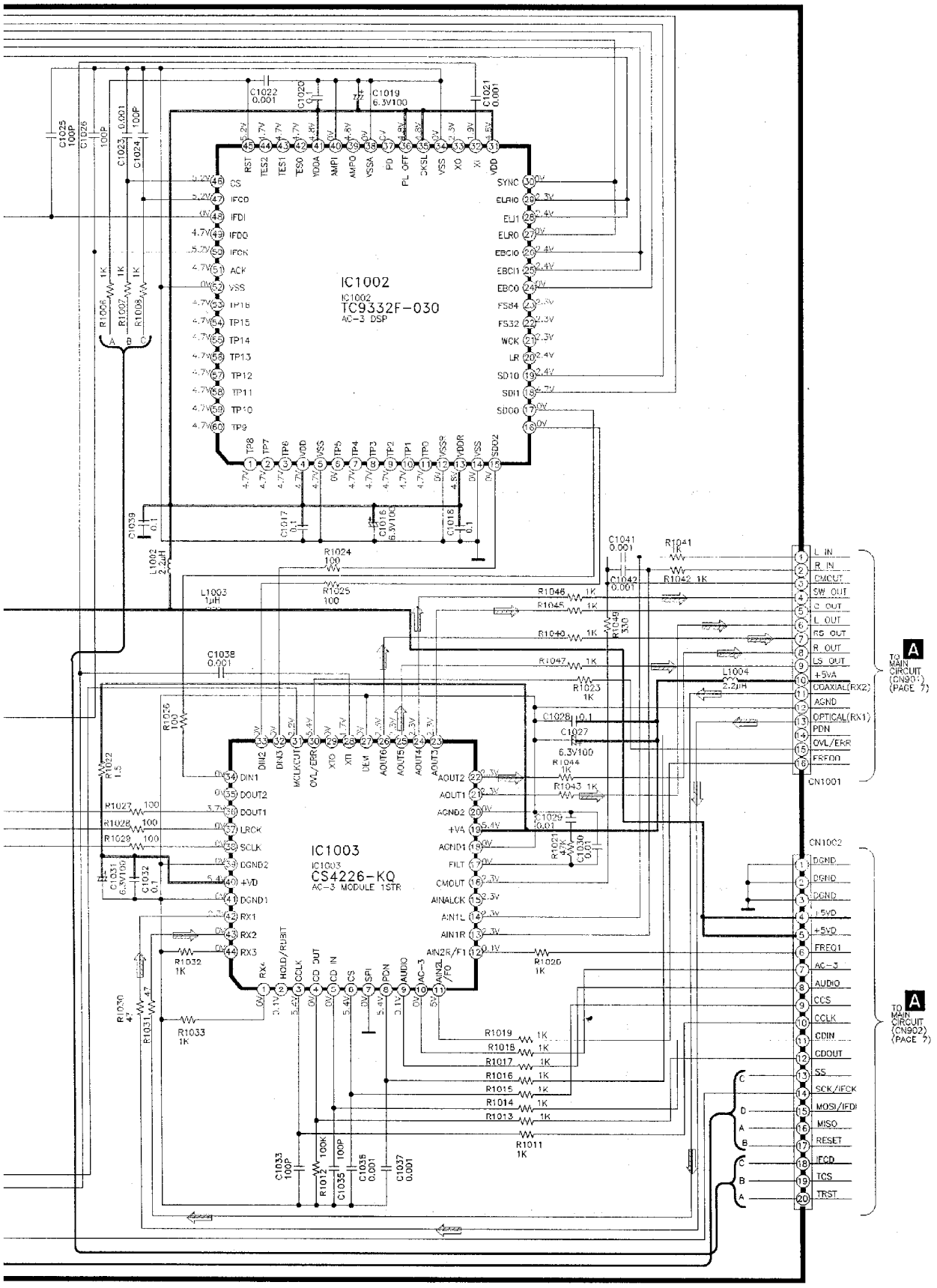
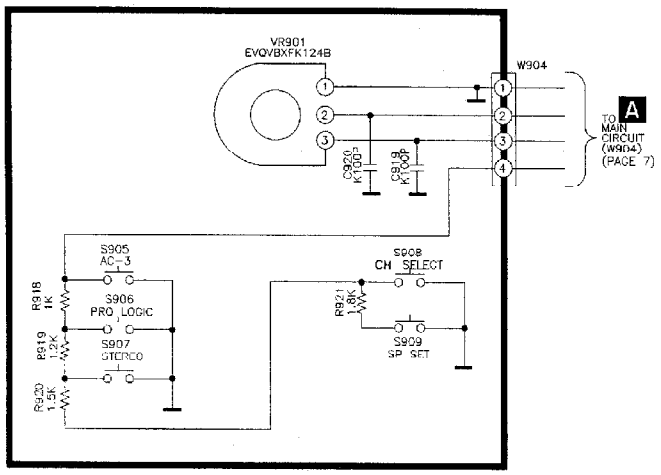
MUTING
Q551–Q554
2SD1915FTA
MUTING
Q705
2SD592AQSTA
REGULATOR
Q706,Q708,Q709
2SA933SSTA
REGULATOR
Q712
RVTDTA114YST
SWITCHING
Q711
RVTDTC114YST
RESET CONTROL
Q713,Q714
2SD1450RSTTA
FL SWITCHING
Q715
2SA992FEPTA
REGULATOR
Q707
2SB621AQSTA
REGULATOR
JK301
DIGITAL 1
JK302
DIGITAL 2
DIGITAL
PCM/
AC-3
JK401
L IN
LINE IN
R IN
L OUT
FRONT
SPEAKER
R OUT
JK402
CENTER
SUBWOOFER
LS OUT
SURROUND
SPEAKER
RS OUT
JK701
AC IN
230V 50HZ
230V-240V 50HZ
E401
E701
PT1
RTP1X4E034
PT2
RTP114E003

F DECODER CIRCUIT

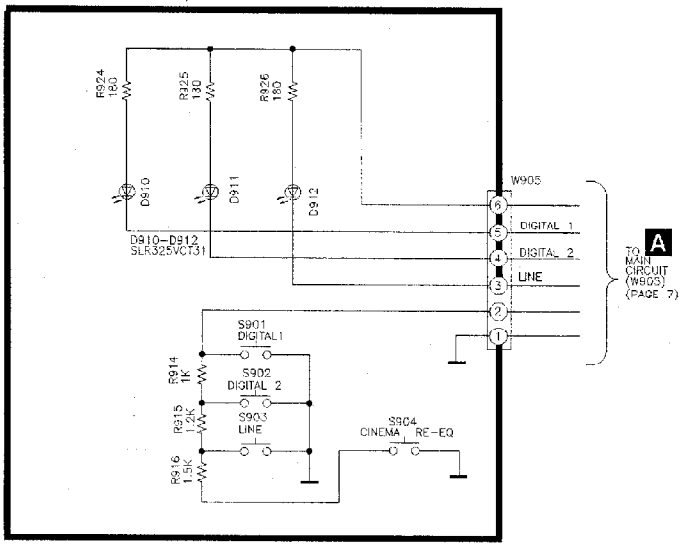



IC1002
IC1002
TC9332F-030
AC-3 DSP
IC1003
IC1003
CS4226-KQ
AC-3 MODULE 1STR
CN1001
CN1002
TO MAIN CIRCUIT (CN901) (PAGE 7)
TO MAIN CIRCUIT (CN902) (PAGE 7)

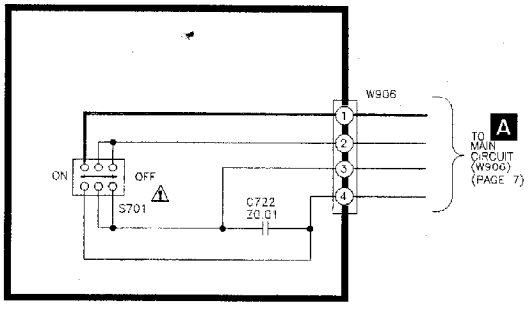
C VOLUME CONTROL CIRCUIT



D INPUT SW/LED CIRCUIT

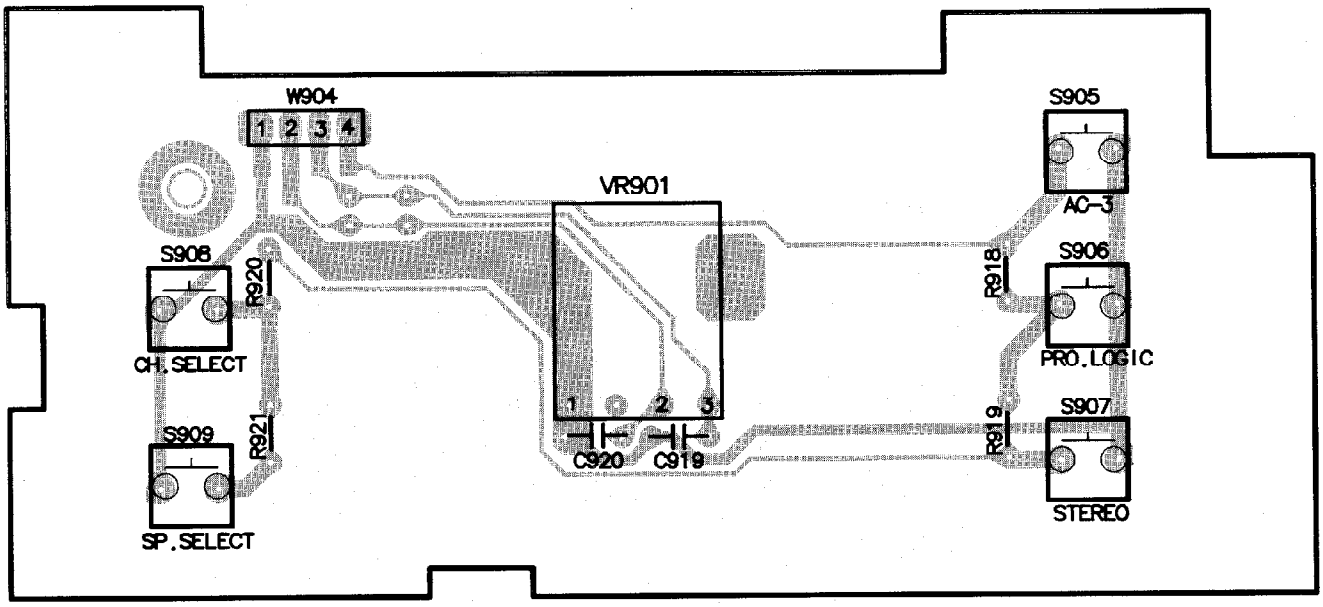


E POWER SW CIRCUIT

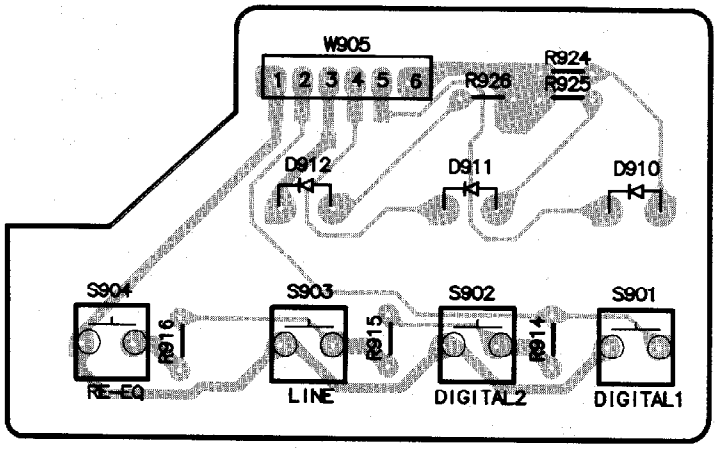


■ Printed Circuit Board

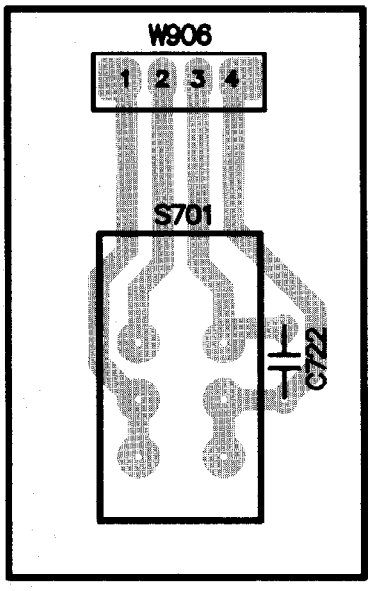
C VOLUME P.C.B. (REP2499B-M)



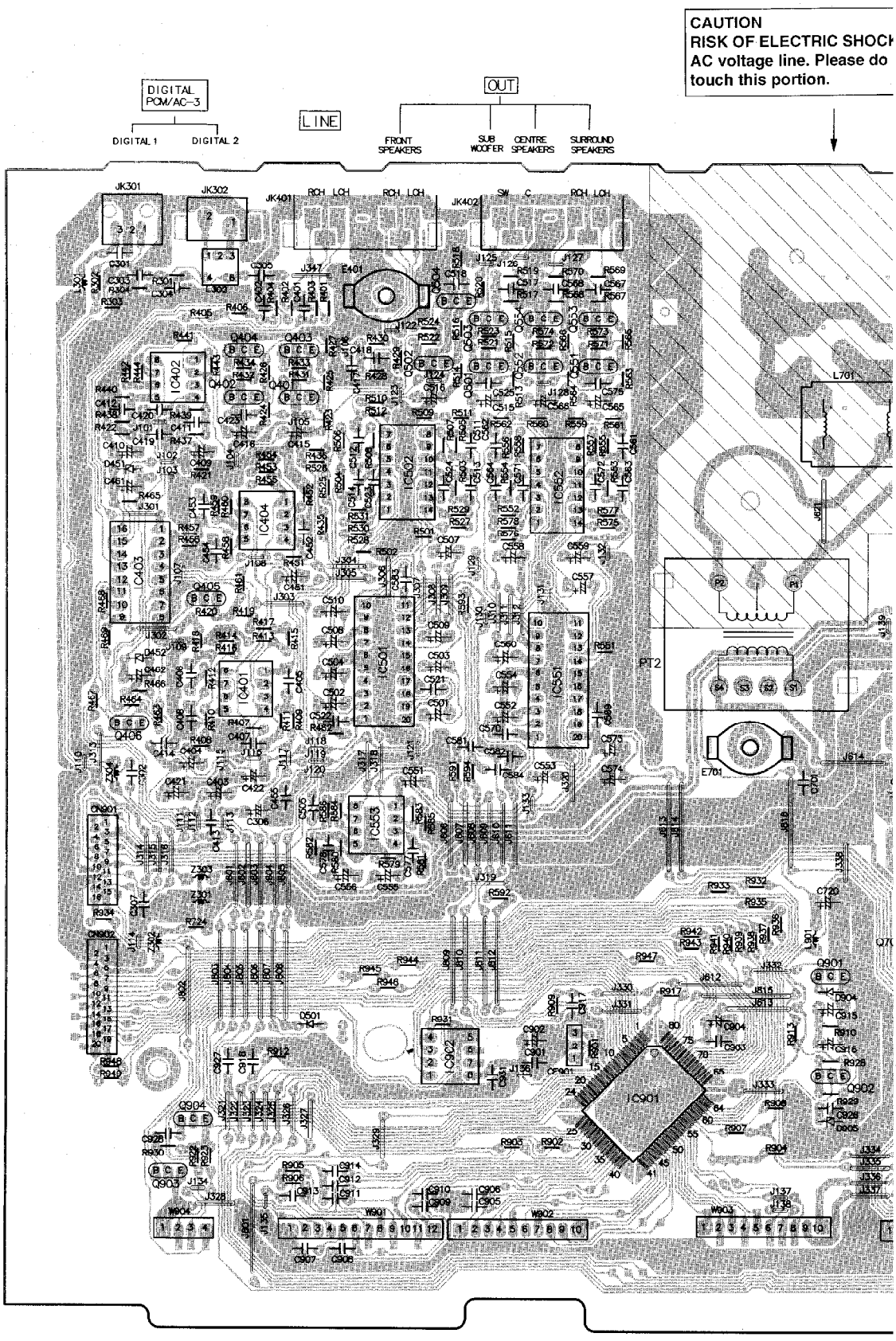
D INPUT SWITCH / LED P.C.B. (REP2499B-M)



E POWER SWITCH P.C.B (REP2499B-M)



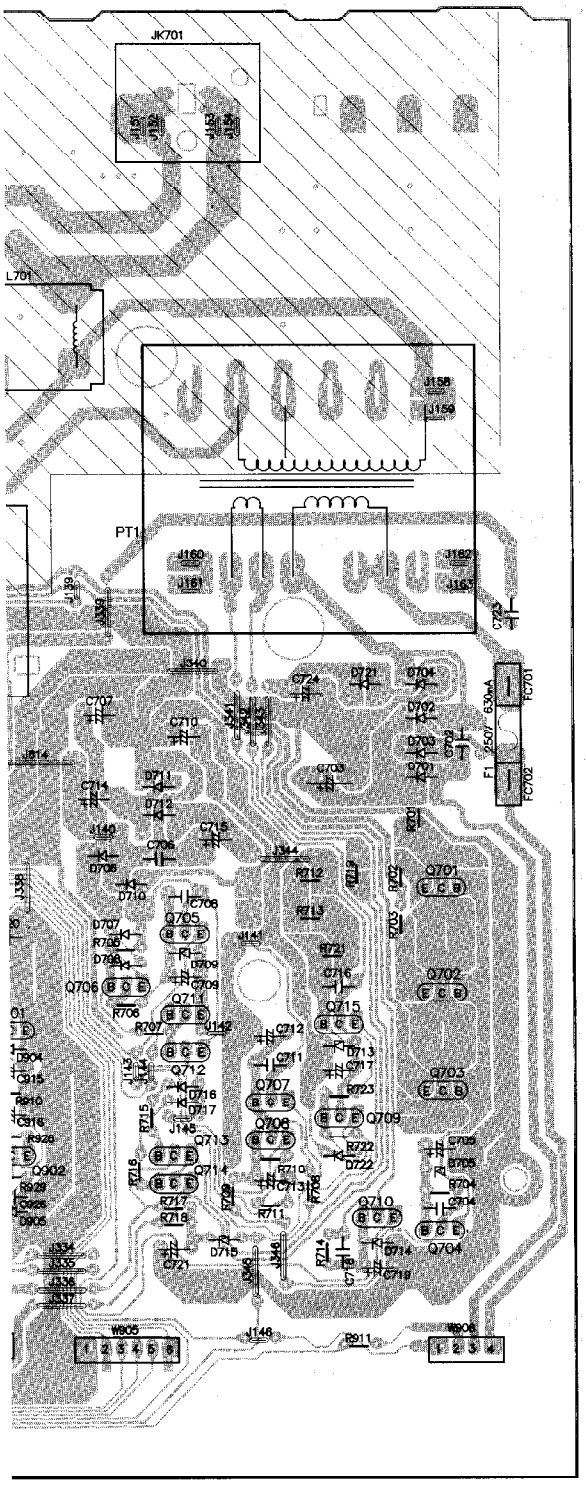
A MAIN P.C.B (REP2499B-M)

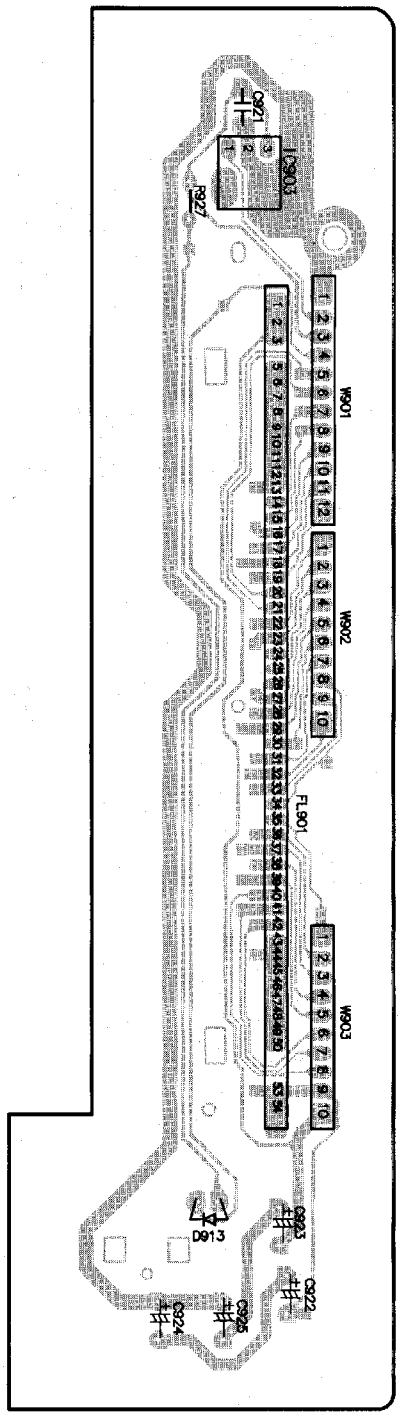


: SHOCK
ease do not

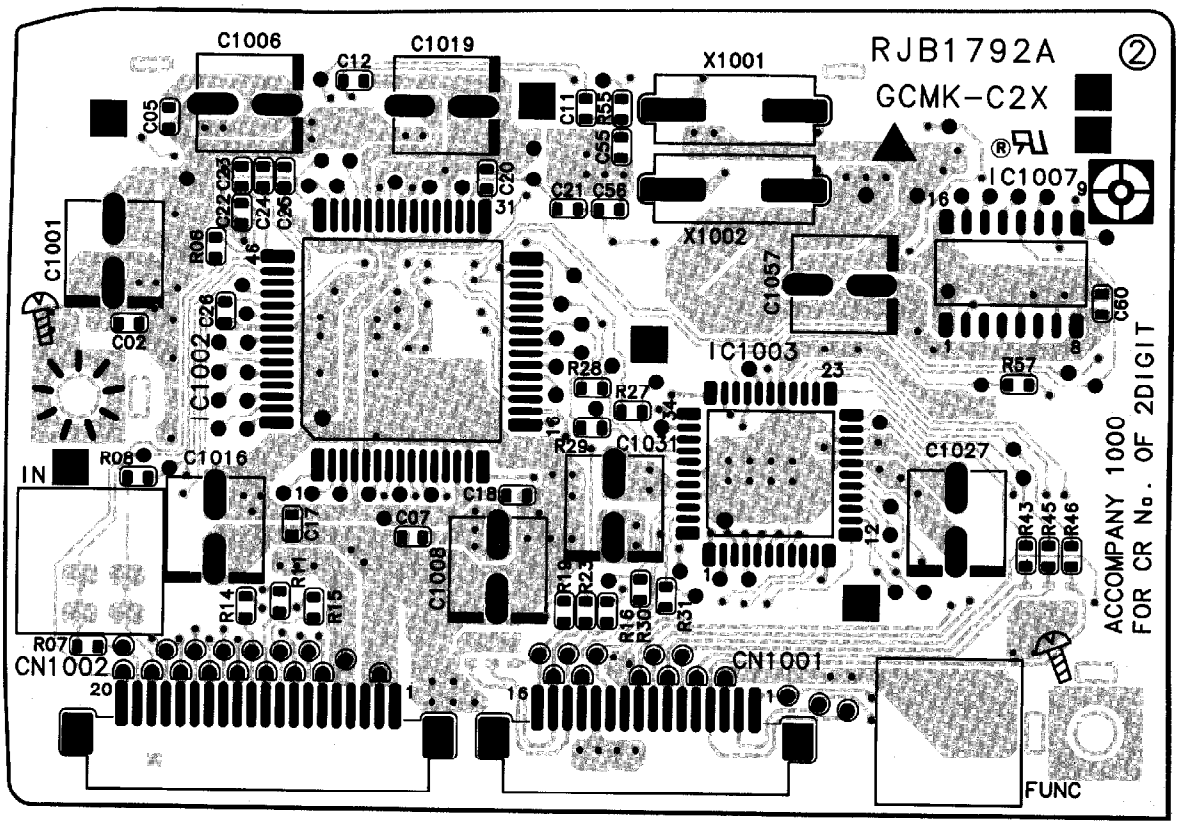
AC IN ~
230V
...E/EG
230V~240V
...EB/GN
50Hz

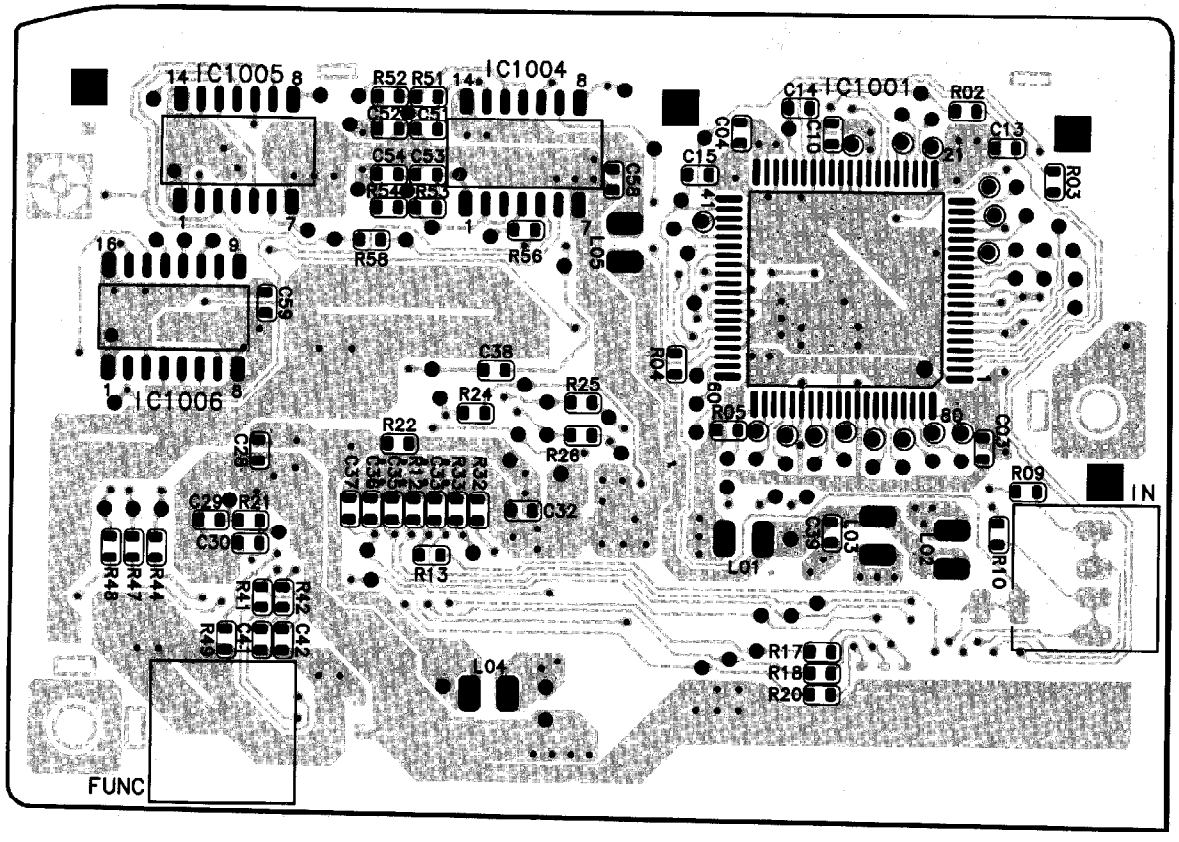
B FL P.C.B.
(REP2499B-M)



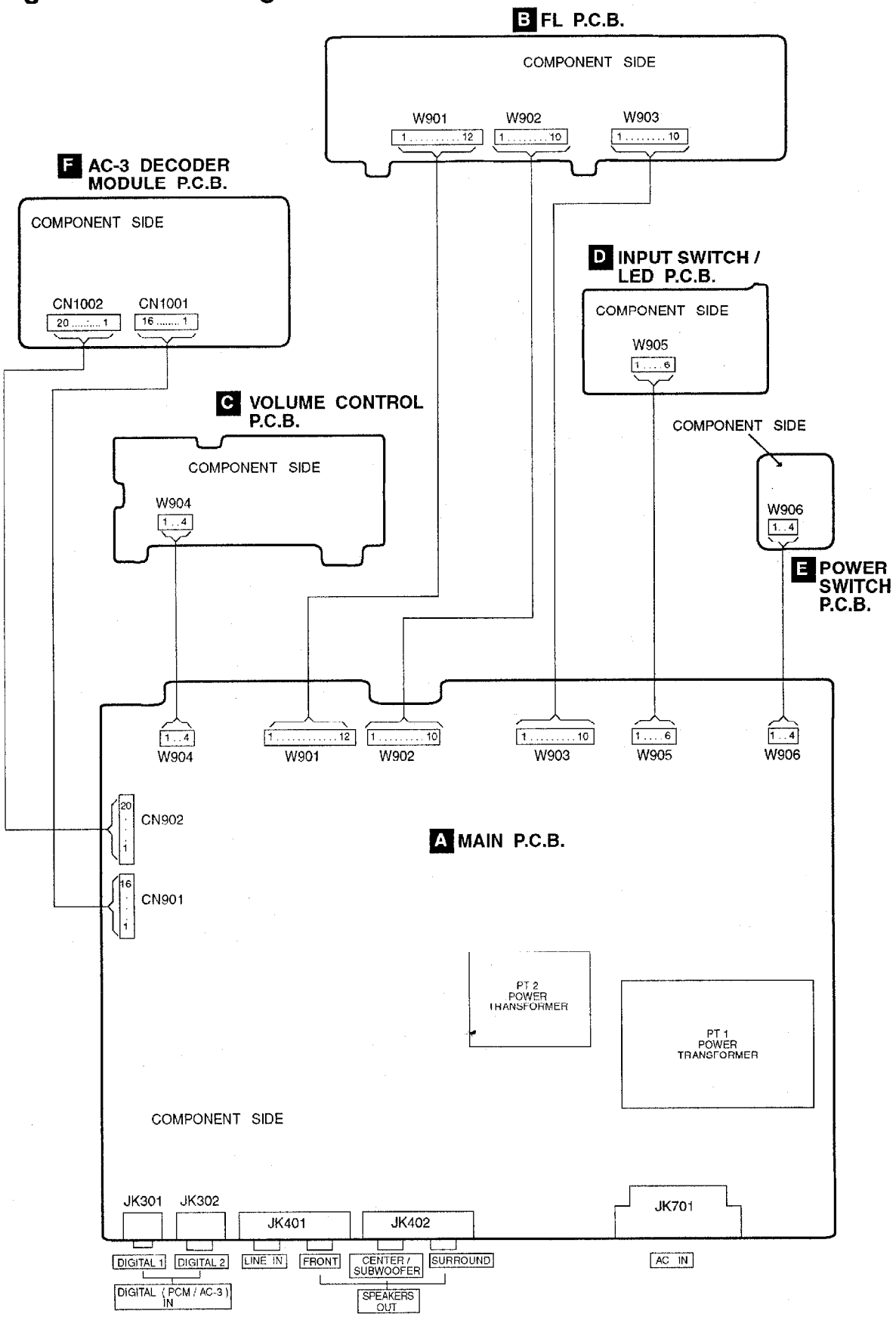


F AC-3 DECODER MODULE P.C.B.
(REP2500A-T)

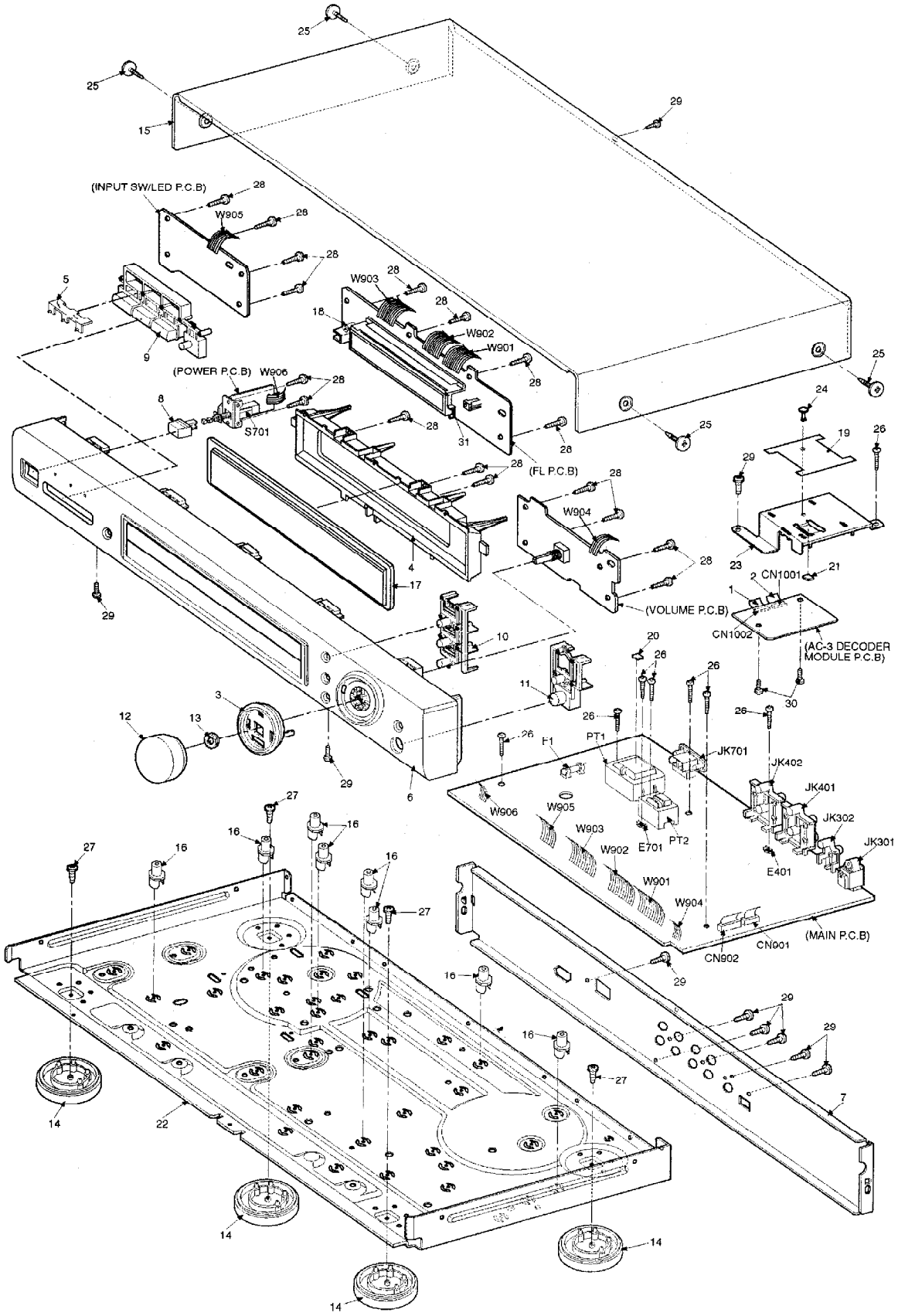




■ Wiring Connection Diagram



■ Cabinet Parts Location



■ Replacement Parts List

Notes: * Important safety notice :
Components identified by ⚠ mark have special characteristics important for safety.
Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.
When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.
* The parenthesized in the Remarks columns specify the areas. (Refer to the cover page for area.)
Parts without these indication can be used for all areas.
* The "(SF)" mark denotes the standard part.
* [M] in Remarks column indicates parts that are supplied by **MESA**.
* [VRD] in Remarks column indicates parts that are supplied by **Video Recorder Division**.

Ref No.	Part No.	Part Name & Description	Remarks
		CABINET AND CHASSIS	
1	REE0785-1	FFC	[M]
2	REE0786-1	FFC	[M]
3	RGK0747-N	VOLUME RING	[M]
4	RFKNAC300EK	WINDOW STAGE ASS'Y	[M]
5	RGL0369-Q	PANEL LIGHT	[M]
6	RFKGAC300EK	FRONT PANEL ASS'Y	[M]
7	RGR0181E-C	REAR PANEL	[M]EG E
7	RGR0181E-D	REAR PANEL	[M]EB
8	RGU0890-K	POWER BUTTON	[M]
9	RGU1541-K	BUTTON (L)	[M]
10	RGU1542-K	BUTTON (C)	[M]
11	RGU1543-K	BUTTON (R)	[M]
12	RGW0229-K	KNOB	[M]
13	RHN90001	M9 NUT	[M]
14	RKA0079-A	FOOT	[M]
15	RKM0032-K	TOP CABINET	[M]
16	RKQ0089-J	PCB HOLDER	[M]
17	RKW0518-Q	FL WINDOW	[M]
18	RMN0447	LED SUPPORT	[M]
19	RMA1098	HOLDING PLATE	[M]
20	RMG0145	TRANSFORMER RUBBER	[M]
21	RMG0469-K	SILICON RUBBER SHEET	[M]
22	RMK0174-7	BOTTOM CHASSIS	[M]
23	RSC0482	SHIELD	[M]
24	SHR9112	PLASTIC RIVET	[M]
25	SNE2129-1	SCREW (CABINET)	[M]
26	XTB3+20JFZ	SCREW	[M]
27	XTB3+6G	SCREW	[M]
28	XTBS26+10J	SCREW (FRONT)	[M]
29	XTBS3+6JFZ1	SCREW	[M]
30	XYN26+C6	SCREW	[M]
31	RMN0372	FL HOLDER	[M]
		INTEGRATED CIRCUITS	
IC401	UPC4570C	IC, TONE CONTROL	[M]
IC402	UPC4570C	IC, TONE CONTROL	[M]
IC403	TC4053BP	IC, CMOS	[M]
IC404	UPC4570C	IC, TONE CONTROL	[M]
IC501	TC9212P	IC, CMOS	[M]
IC502	AN6554F	IC, OSD AMP	[M]
IC551	TC9212P	IC, CMOS	[M]
IC552	AN6554F	IC, OSD AMP	[M]
IC553	UPC4570C	IC, TONE CONTROL	[M]
IC901	M38B53M4051F	IC, MICOM	[M]
IC902	XLJ93LC46	IC, EEPROM	[M]
IC903	RCD12042TE	IC, REMOTE SENSOR	[M]
		TRANSISTORS	
Q401	2SD1915FTA	TRANSISTOR	[M]
Q402	2SD1915FTA	TRANSISTOR	[M]
Q403	2SD1915FTA	TRANSISTOR	[M]
Q404	2SD1915FTA	TRANSISTOR	[M]
Q405	2SD1915FTA	TRANSISTOR	[M]
Q406	RVTDTA114EST	TRANSISTOR	[M]
Q501	2SD1915FTA	TRANSISTOR	[M]
Q502	2SD1915FTA	TRANSISTOR	[M]
Q503	2SD1915FTA	TRANSISTOR	[M]
Q504	2SD1915FTA	TRANSISTOR	[M]
Q551	2SD1915FTA	TRANSISTOR	[M]
Q552	2SD1915FTA	TRANSISTOR	[M]
Q553	2SD1915FTA	TRANSISTOR	[M]
Q554	2SD1915FTA	TRANSISTOR	[M]
Q701	2SD2137PQTA	TRANSISTOR	[M]
Q702	2SD2137PQTA	TRANSISTOR	[M]
Q703	2SD2137PQTA	TRANSISTOR	[M]
Q704	2SC1740SSTA	TRANSISTOR	[M]⚠
Q705	2SD592AQSTA	TRANSISTOR	[M]⚠
Q706	2SA933SSTA	TRANSISTOR	[M]⚠
Q707	2SB621AQSTA	TRANSISTOR	[M]⚠
Q708	2SA933SSTA	TRANSISTOR	[M]⚠
Q709	2SA933SSTA	TRANSISTOR	[M]⚠
Q710	2SC1740SSTA	TRANSISTOR	[M]⚠
Q711	RVTDTC114YST	TRANSISTOR	[M]
Q712	RVTDTA114YST	TRANSISTOR	[M]
Q713	2SD1450RSTTA	TRANSISTOR	[M]
Q714	2SD1450RSTTA	TRANSISTOR	[M]
Q715	2SA992FEPTA	TRANSISTOR	[M]⚠
Q901	RVTDTC114YST	TRANSISTOR	[M]
Q902	2SA933SSTA	TRANSISTOR	[M]⚠
Q903	RVTDTC114YST	TRANSISTOR	[M]
Q904	RVTDTA114YST	TRANSISTOR	[M]
		DIODES	
D451	MTZJ6R2CTA	DIODE	[M]
D452	MTZJ6R2CTA	DIODE	[M]
D501	RVD1SS133TA	DIODE	[M]
D701	RL1N4003N02	DIODE	[M]
D702	RL1N4003N02	DIODE	[M]
D703	RL1N4003N02	DIODE	[M]
D704	RL1N4003N02	DIODE	[M]
D705	MTZJ6R2CTA	DIODE	[M]⚠
D706	RL1N4003N02	DIODE	[M]
D707	RVD1SS133TA	DIODE	[M]
D708	RVD1SS133TA	DIODE	[M]
D709	MTZJ13BTA	DIODE	[M]⚠
D710	RL1N4003N02	DIODE	[M]
D711	RL1N4003N02	DIODE	[M]
D712	RL1N4003N02	DIODE	[M]
D713	MTZJ27DTA	DIODE	[M]⚠
D714	MTZJ6R2BTA	DIODE	[M]⚠
D715	MTZJ4R7BTA	DIODE	[M]⚠
D716	RVD1SS133TA	DIODE	[M]
D717	RVD1SS133TA	DIODE	[M]
D721	RL1N4003N02	DIODE	[M]
D722	RVD1SS133TA	DIODE	[M]
D904	RVD1SS133TA	DIODE	[M]
D905	MTZJ3R9ATA	DIODE	[M]⚠
D910	SLR325VCT31	DIODE	[M]
D911	SLR325VCT31	DIODE	[M]
D912	SLR325VCT31	DIODE	[M]
D913	LN846RPH	DIODE	[M]

Ref No.	Part No.	Part Name & Description	Remarks
		VARIABLE RESISTORS	
VR901	EVQVBXFK124B	VR, VOLUME	[M]
		SWITCHES	
S701	RSP2B023-A	SW, POWER	[M]⚠
S901	EVQ21405R	SW, DIGITAL 1	[M]
S902	EVQ21405R	SW, DIGITAL 2	[M]
S903	EVQ21405R	SW, LINE	[M]
S904	EVQ21405R	SW, RE-EQ	[M]
S905	EVQ21405R	SW, AC-3	[M]
S906	EVQ21405R	SW, PRO. LOGIC	[M]
S907	EVQ21405R	SW, STEREO	[M]
S908	EVQ21405R	SW, CH. SELECT	[M]
S909	EVQ21405R	SW, SP. SELECT	[M]
		CONNECTORS	
CN901	RJS2A3316	16 PIN CONNECTOR	[M]
CN902	RJS2A3320	20 PIN CONNECTOR	[M]
		COILS & TRANSFORMERS	
L301	RLQZP1R0KT-Y	AXIAL COIL	[M]
L302	RLQZ150M-0	CHOKE COIL	[M]
L701	RLQZ271M	AC LINE COIL	[M]⚠
L901	RLQB101KTA-Y	CHOKE COIL	[M]
PT1	RTP1K4E034	POWER TRANSFORMER	[M]⚠
PT2	RTP1I4E003	POWER TRANSFORMER	[M]⚠

Ref No.	Part No.	Part Name & Description	Remarks
		COMPONENT COMBINATION	
Z301	BL02RN2R62T4	EMI BEAD CORE	[M]
Z302	BL02RN2R62T4	EMI BEAD CORE	[M]
Z303	BL02RN2R62T4	EMI BEAD CORE	[M]
Z304	BL02RN2R62T4	EMI BEAD CORE	[M]
		CERAMIC FILTERS	
CF901	RVBCST4R00MT	CERAMIC OSCILLATOR	[M]
		EARTH TERMINAL	
E401	SNE1004-2	EARTH TERMINAL	[M]
E701	SNE1004-2	EARTH TERMINAL	[M]
		DISPLAY TUBE	
FL901	RSL0239-F	FL	[M]
		FUSES	
F1	XBA2C06TB0	FUSE	[M]⚠
		FUSE HOLDER	
FC701	EYF52BC	FUSE HOLDER	[M]
FC702	EYF52BC	FUSE HOLDER	[M]

Ref No.	Part No.	Part Name & Description	Remarks
		JACKS	
JK301	T0RX178A	JK, OPTICAL MODULE	[M]
JK302	SJFD7-8	JK, RCA PIN	[M]
JK401	SJF3069-4N	JK, LINE IN	[M]
JK402	SJF3069-18N	JK, RCA PIN	[M]
JK701	SJS9236-1	JK, AC INLET	[M]⚠
		PACKING MATERIALS	
P1	RPG3472	PACKING CASE	[M]E
P1	RPG3473	PACKING CASE	[M]EG
P1	RPG3620	PACKING CASE	[M]EB
P2	RPN1058	POLYFOAM	[M]
P3	SPP740	BAG	[M]
P4	SPSD152	ACCESSORY BOX	[M]
		ACCESSORIES	
A1	EUR644378	REMOTE CONTROL	[M]
A1-1	UR64EC1822	R/C BATTERY COVER	[M]
A2	RJA0019-2K	AC CORD (SF)	[M]EG E⚠
A2	VJA0733	AC CORD [VRD] (SF)	EB⚠
A3	RJL1P021B08	IP CORD	[M]
A4	RJL2P004B08	STEREO CABLE	[M]
A5	RFKSAC300EGK	O/I BOOK ASS'Y	[M]EG
A5	RFKSAC300EK	O/I BOOK ASS'Y	[M]E
A5	RQT3952-B	O/I BOOK	[M]EB
A6	SJP2281	OPTICAL CABLE	[M]

■ Resistors & Capacitors

Notes : * Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors),etc. are used.
When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.
* Capacitor values are in microfarad (μF) unless specified otherwise, P=Pico-farads (pF) F=Farads (F)
* Resistors values are in ohms, unless specified otherwise, 1k=1,000(OHM), 1M=1,000k(OHM)

Ref No.	Part No.	Values & Remarks
	RESISTORS	
R301	ERDS2TJ151T	150 1/4W [M]
R302	ERDS2TJ152T	1.5K 1/4W [M]
R303	ERDS2TJ471T	470 1/4W [M]
R304	ERDS2TJ100T	10 1/4W [M]
R401	ERDS2TJ152T	1.5K 1/4W [M]
R402	ERDS2TJ152T	1.5K 1/4W [M]
R403	ERDS2TJ103T	10K 1/4W [M]

Ref No.	Part No.	Values & Remarks
R404	ERDS2TJ103T	10K 1/4W [M]
R405	ERDS2TJ153T	15K 1/4W [M]
R406	ERDS2TJ153T	15K 1/4W [M]
R407	ERDS2TJ224T	220K 1/4W [M]
R408	ERDS2TJ224T	220K 1/4W [M]
R409	ERDS2TJ562T	5.6K 1/4W [M]
R410	ERDS2TJ562T	5.6K 1/4W [M]
R411	ERDS2TJ153T	15K 1/4W [M]
R412	ERDS2TJ153T	15K 1/4W [M]

Ref No.	Part No.	Values & Remarks
R413	ERDS2TJ182T	1.8K 1/4W [M]
R414	ERDS2TJ182T	1.8K 1/4W [M]
R415	ERDS2TJ222T	2.2K 1/4W [M]
R416	ERDS2TJ222T	2.2K 1/4W [M]
R417	ERDS2TJ222T	2.2K 1/4W [M]
R418	ERDS2TJ222T	2.2K 1/4W [M]
R419	ERDS2TJ222T	2.2K 1/4W [M]
R420	ERDS2TJ222T	2.2K 1/4W [M]
R421	ERDS2TJ224T	220K 1/4W [M]

Ref No.	Part No.	Values & Remarks
R422	ERDS2TJ224T	220K 1/4W [M]
R423	ERDS2TJ331T	330 1/4W [M]
R424	ERDS2TJ331T	330 1/4W [M]
R425	ERDS2TJ331T	330 1/4W [M]
R426	ERDS2TJ331T	330 1/4W [M]
R427	ERDS2TJ473T	47K 1/4W [M]
R428	ERDS2TJ473T	47K 1/4W [M]
R429	ERDS2TJ331T	330 1/4W [M]
R430	ERDS2TJ331T	330 1/4W [M]

Ref No.	Part No.	Values & Remarks
R431	ERDS2TJ102T	1K 1/4W [M]
R432	ERDS2TJ102T	1K 1/4W [M]
R433	ERDS2TJ102T	1K 1/4W [M]
R434	ERDS2TJ102T	1K 1/4W [M]
R435	ERDS2TJ332T	3.3K 1/4W [M]
R436	ERDS2TJ474T	470K 1/4W [M]
R437	ERDS2TJ471T	470 1/4W [M]
R438	ERDS2TJ471T	470 1/4W [M]
R439	ERDS2TJ224T	220K 1/4W [M]
R440	ERDS2TJ224T	220K 1/4W [M]
R441	ERDS2TJ182T	1.8K 1/4W [M]
R442	ERDS2TJ182T	1.8K 1/4W [M]
R443	ERDS2TJ182T	1.8K 1/4W [M]
R444	ERDS2TJ182T	1.8K 1/4W [M]
R451	ERDS2TJ471T	470 1/4W [M]
R452	ERDS2TJ224T	220K 1/4W [M]
R453	ERDS2TJ681T	680 1/4W [M]
R454	ERDS2TJ181T	180 1/4W [M]
R455	ERDS2TJ272T	2.7K 1/4W [M]
R456	ERDS2TJ273T	27K 1/4W [M]
R457	ERDS2TJ472T	4.7K 1/4W [M]
R458	ERDS2TJ103T	10K 1/4W [M]
R459	ERDS2TJ182T	1.8K 1/4W [M]
R460	ERDS2TJ222T	2.2K 1/4W [M]
R461	ERDS2TJ101T	100 1/4W [M]
R462	ERDS2TJ224T	220K 1/4W [M]
R463	ERDS2TJ332T	3.3K 1/4W [M]
R464	ERDS2TJ474T	470K 1/4W [M]
R465	ERDS2TJ332T	3.3K 1/4W [M]
R466	ERDS2TJ332T	3.3K 1/4W [M]
R467	ERDS2TJ102T	1K 1/4W [M]
R468	ERDS2TJ102T	1K 1/4W [M]
R469	ERDS2TJ102T	1K 1/4W [M]
R501	ERDS2TJ124T	120K 1/4W [M]
R502	ERDS2TJ104T	100K 1/4W [M]
R503	ERDS2TJ224T	220K 1/4W [M]
R504	ERDS2TJ224T	220K 1/4W [M]
R505	ERDS2TJ562T	5.6K 1/4W [M]
R506	ERDS2TJ562T	5.6K 1/4W [M]
R507	ERDS2TJ153T	15K 1/4W [M]
R508	ERDS2TJ183T	18K 1/4W [M]
R509	ERDS2TJ222T	2.2K 1/4W [M]
R510	ERDS2TJ182T	1.8K 1/4W [M]
R511	ERDS2TJ222T	2.2K 1/4W [M]
R512	ERDS2TJ222T	2.2K 1/4W [M]
R513	ERDS2TJ331T	330 1/4W [M]
R514	ERDS2TJ331T	330 1/4W [M]
R515	ERDS2TJ331T	330 1/4W [M]

Ref No.	Part No.	Values & Remarks
R516	ERDS2TJ331T	330 1/4W [M]
R517	ERDS2TJ473T	47K 1/4W [M]
R518	ERDS2TJ473T	47K 1/4W [M]
R519	ERDS2TJ331T	330 1/4W [M]
R520	ERDS2TJ331T	330 1/4W [M]
R521	ERDS2TJ102T	1K 1/4W [M]
R522	ERDS2TJ102T	1K 1/4W [M]
R523	ERDS2TJ102T	1K 1/4W [M]
R524	ERDS2TJ102T	1K 1/4W [M]
R525	ERDS2TJ272T	2.7K 1/4W [M]
R526	ERDS2TJ474T	470K 1/4W [M]
R527	ERDS2TJ332T	3.3K 1/4W [M]
R528	ERDS2TJ332T	3.3K 1/4W [M]
R529	ERDS2TJ102T	1K 1/4W [M]
R530	ERDS2TJ561T	560 1/4W [M]
R531	ERDS2TJ560T	56 1/4W [M]
R551	ERDS2TJ823T	82K 1/4W [M]
R552	ERDS2TJ823T	82K 1/4W [M]
R553	ERDS2TJ224T	220K 1/4W [M]
R554	ERDS2TJ224T	220K 1/4W [M]
R555	ERDS2TJ562T	5.6K 1/4W [M]
R556	ERDS2TJ562T	5.6K 1/4W [M]
R557	ERDS2TJ153T	15K 1/4W [M]
R558	ERDS2TJ153T	15K 1/4W [M]
R559	ERDS2TJ222T	2.2K 1/4W [M]
R560	ERDS2TJ222T	2.2K 1/4W [M]
R561	ERDS2TJ222T	2.2K 1/4W [M]
R562	ERDS2TJ222T	2.2K 1/4W [M]
R563	ERDS2TJ331T	330 1/4W [M]
R564	ERDS2TJ331T	330 1/4W [M]
R565	ERDS2TJ331T	330 1/4W [M]
R566	ERDS2TJ331T	330 1/4W [M]
R567	ERDS2TJ473T	47K 1/4W [M]
R568	ERDS2TJ473T	47K 1/4W [M]
R569	ERDS2TJ331T	330 1/4W [M]
R570	ERDS2TJ331T	330 1/4W [M]
R571	ERDS2TJ102T	1K 1/4W [M]
R572	ERDS2TJ102T	1K 1/4W [M]
R573	ERDS2TJ102T	1K 1/4W [M]
R574	ERDS2TJ102T	1K 1/4W [M]
R575	ERDS2TJ182T	1.8K 1/4W [M]
R576	ERDS2TJ182T	1.8K 1/4W [M]
R577	ERDS2TJ152T	1.5K 1/4W [M]
R578	ERDS2TJ152T	1.5K 1/4W [M]
R579	ERDS2TJ101T	100 1/4W [M]
R580	ERDS2TJ101T	100 1/4W [M]
R581	ERDS2TJ224T	220K 1/4W [M]
R582	ERDS2TJ224T	220K 1/4W [M]

Ref No.	Part No.	Values & Remarks
R583	ERDS2TJ102T	1K 1/4W [M]
R584	ERDS2TJ102T	1K 1/4W [M]
R585	ERDS2TJ102T	1K 1/4W [M]
R586	ERDS2TJ102T	1K 1/4W [M]
R591	ERDS2TJ332T	3.3K 1/4W [M]
R592	ERDS2TJ332T	3.3K 1/4W [M]
R593	ERDS2TJ332T	3.3K 1/4W [M]
R594	ERDS2TJ332T	3.3K 1/4W [M]
R701	ERDS1FVJ1R0T	1 ⚠ 1/2W [M]
R702	ERDS2TJ1R0T	1 1/4W [M]
R703	ERDS2TJ1R0T	1 1/4W [M]
R704	ERDS2TJ392T	3.9K 1/4W [M]
R705	ERDS2TJ561T	560 1/4W [M]
R706	ERDS2TJ102T	1K 1/4W [M]
R707	ERDS2TJ153T	15K 1/4W [M]
R708	ERDS2TJ103T	10K 1/4W [M]
R709	ERDS2TJ273T	27K 1/4W [M]
R710	ERDS2TJ223T	22K 1/4W [M]
R711	ERDS2TJ272T	2.7K 1/4W [M]
R712	ERDS1FVJ102T	1K ⚠ 1/2W [M]
R713	ERDS1FVJ102T	1K ⚠ 1/2W [M]
R714	ERDS2TJ182T	1.8K 1/4W [M]
R715	ERDS2TJ103T	10K 1/4W [M]
R716	ERDS2TJ103T	10K 1/4W [M]
R717	ERDS2TJ101T	100 1/4W [M]
R718	ERDS2TJ101T	100 1/4W [M]
R719	ERDS1FVJ4R7T	4.7 ⚠ 1/2W [M]
R721	ERDS1FVJ102T	1K ⚠ 1/2W [M]
R722	ERDS2TJ273T	27K 1/4W [M]
R723	ERDS2TJ104T	100K 1/4W [M]
R724	ERDS2TJ222T	2.2K 1/4W [M]
R901	ERDS2TJ102T	1K 1/4W [M]
R902	ERDS2TJ102T	1K 1/4W [M]
R903	ERDS2TJ102T	1K 1/4W [M]
R904	ERDS2TJ104T	100K 1/4W [M]
R905	ERDS2TJ104T	100K 1/4W [M]
R906	ERDS2TJ104T	100K 1/4W [M]
R907	ERDS2TJ104T	100K 1/4W [M]
R908	ERDS2TJ103T	10K 1/4W [M]
R909	ERDS2TJ104T	100K 1/4W [M]
R910	ERDS2TJ472T	4.7K 1/4W [M]
R911	ERDS2TJ332T	3.3K 1/4W [M]
R912	ERDS2TJ104T	100K 1/4W [M]
R913	ERDS2TJ103T	10K 1/4W [M]
R914	ERDS2TJ102T	1K 1/4W [M]
R915	ERDS2TJ122T	1.2K 1/4W [M]
R916	ERDS2TJ152T	1.5K 1/4W [M]
R917	ERDS2TJ103T	10K 1/4W [M]

Ref No.	Part No.	Values & Remarks
R918	ERDS2TJ102T	1K 1/4W [M]
R919	ERDS2TJ122T	1.2K 1/4W [M]
R920	ERDS2TJ152T	1.5K 1/4W [M]
R921	ERDS2TJ182T	1.8K 1/4W [M]
R922	ERDS2TJ473T	47K 1/4W [M]
R923	ERDS2TJ473T	47K 1/4W [M]
R924	ERDS2TJ181T	180 1/4W [M]
R925	ERDS2TJ181T	180 1/4W [M]
R926	ERDS2TJ181T	180 1/4W [M]
R927	ERDS2TJ181T	180 1/4W [M]
R928	ERDS2TJ271T	270 1/4W [M]
R929	ERDS2TJ121T	120 1/4W [M]
R930	ERDS2TJ473T	47K 1/4W [M]
R931	ERDS2TJ104T	100K 1/4W [M]
R932	ERDS2TJ101T	100 1/4W [M]
R933	ERDS2TJ101T	100 1/4W [M]
R934	ERDS2TJ101T	100 1/4W [M]
R935	ERDS2TJ101T	100 1/4W [M]
R936	ERDS2TJ101T	100 1/4W [M]
R937	ERDS2TJ101T	100 1/4W [M]
R938	ERDS2TJ101T	100 1/4W [M]
R939	ERDS2TJ101T	100 1/4W [M]
R940	ERDS2TJ101T	100 1/4W [M]
R941	ERDS2TJ101T	100 1/4W [M]
R942	ERDS2TJ101T	100 1/4W [M]
R943	ERDS2TJ101T	100 1/4W [M]
R944	ERDS2TJ101T	100 1/4W [M]
R945	ERDS2TJ101T	100 1/4W [M]
R946	ERDS2TJ101T	100 1/4W [M]
R947	ERDS2TJ101T	100 1/4W [M]
R948	ERDS2TJ101T	100 1/4W [M]
R949	ERDS2TJ101T	100 1/4W [M]
	CAPACITORS	
C301	ECBT1E223ZF5	0.022 25V [M]
C302	ECBT1E103ZF5	0.01 25V [M]
C303	ECBT1E103ZF5	0.01 25V [M]
C304	ECBT1E103ZF5	0.01 25V [M]
C305	ECBT1E103ZF5	0.01 25V [M]
C306	ECEA0JKA470B	47 6.3V [M]
C307	ECBT1H101KB5	100P 50V [M]
C401	ECBT1H680J5	68P 50V [M]
C402	ECBT1H680J5	68P 50V [M]
C403	ECEA1VKA4R7B	4.7 35V [M]
C404	ECEA1VKA4R7B	4.7 35V [M]
C405	ECCR1H391J5	390P 50V [M]
C406	ECCR1H391J5	390P 50V [M]

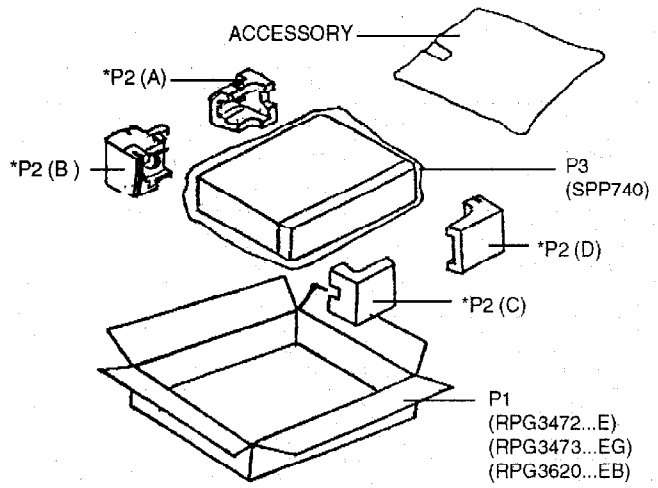
Ref No.	Part No.	Values & Remarks
C407	ECCR1H391J5	390P 50V [M]
C408	ECCR1H391J5	390P 50V [M]
C409	ECEA1HKA010B	1 50V [M]
C410	ECEA1HKA010B	1 50V [M]
C411	ECBT1H101KB5	100P 50V [M]
C412	ECBT1H101KB5	100P 50V [M]
C413	ECBT1H221KB5	220P 50V [M]
C414	ECBT1H221KB5	220P 50V [M]
C415	ECEA1CKA100B	10 16V [M]
C416	ECEA1CKA100B	10 16V [M]
C417	ECBT1H102KB5	1000P 50V [M]
C418	ECBT1H102KB5	1000P 50V [M]
C419	ECBT1E103ZF5	0.01 25V [M]
C420	ECBT1E103ZF5	0.01 25V [M]
C421	ECEA1CKA100B	10 16V [M]
C422	ECEA1CKA100B	10 16V [M]
C423	ECBT1E103ZF5	0.01 25V [M]
C451	ECEA1VKA4R7B	4.7 35V [M]
C452	ECBT1H221KB5	220P 50V [M]
C453	ECQV1H104JM3	0.1 50V [M]
C454	ECQV1H104JM3	0.1 50V [M]
C455	ECBT1H102KB5	1000P 50V [M]
C461	ECEA1CKA100B	10 16V [M]
C462	ECEA1CKA100B	10 16V [M]
C501	ECEA1VKA4R7B	4.7 35V [M]
C502	ECEA1VKA4R7B	4.7 35V [M]
C503	ECEA1VKA4R7B	4.7 35V [M]
C504	ECEA1VKA4R7B	4.7 35V [M]
C505	ECBT1H102KB5	1000P 50V [M]
C507	ECEA1CKA100B	10 16V [M]
C508	ECEA1CKA100B	10 16V [M]
C509	ECEA1VKA4R7B	4.7 35V [M]
C510	ECEA1VKA4R7B	4.7 35V [M]

Ref No.	Part No.	Values & Remarks
C511	ECCR1H331J5	330P 50V [M]
C512	ECQV1H563JM3	0.056 50V [M]
C513	ECCR1H331J5	330P 50V [M]
C514	ECQV1H563JM3	0.056 50V [M]
C515	ECEA1CKA100B	10 16V [M]
C516	ECEA1CKA100B	10 16V [M]
C517	ECBT1H102KB5	1000P 50V [M]
C518	ECBT1H102KB5	1000P 50V [M]
C521	ECBT1E103ZF5	0.01 25V [M]
C522	ECBT1E103ZF5	0.01 25V [M]
C523	ECBT1E103ZF5	0.01 25V [M]
C524	ECBT1E103ZF5	0.01 25V [M]
C525	ECBT1E103ZF5	0.01 25V [M]
C551	ECEA1VKA4R7B	4.7 35V [M]
C552	ECEA1VKA4R7B	4.7 35V [M]
C553	ECEA1VKA4R7B	4.7 35V [M]
C554	ECEA1VKA4R7B	4.7 35V [M]
C555	ECEA1VKA4R7B	4.7 35V [M]
C556	ECEA1VKA4R7B	4.7 35V [M]
C557	ECEA1CKA100B	10 16V [M]
C558	ECEA1CKA100B	10 16V [M]
C559	ECEA1VKA4R7B	4.7 35V [M]
C560	ECEA1VKA4R7B	4.7 35V [M]
C561	ECCR1H331J5	330P 50V [M]
C562	ECCR1H331J5	330P 50V [M]
C563	ECCR1H331J5	330P 50V [M]
C564	ECCR1H331J5	330P 50V [M]
C565	ECEA1CKA100B	10 16V [M]
C566	ECEA1CKA100B	10 16V [M]
C567	ECBT1H102KB5	1000P 50V [M]
C568	ECBT1H102KB5	1000P 50V [M]
C569	ECBT1E103ZF5	0.01 25V [M]
C570	ECBT1E103ZF5	0.01 25V [M]

Ref No.	Part No.	Values & Remarks
C571	ECBT1E103ZF5	0.01 25V [M]
C572	ECBT1E103ZF5	0.01 25V [M]
C573	ECEA1CKA100B	10 16V [M]
C574	ECEA1CKA100B	10 16V [M]
C575	ECBT1E103ZF5	0.01 25V [M]
C577	ECBT1H102KB5	1000P 50V [M]
C578	ECBT1H102KB5	1000P 50V [M]
C581	ECBT1H101KB5	100P 50V [M]
C582	ECBT1H101KB5	100P 50V [M]
C583	ECBT1H101KB5	100P 50V [M]
C584	ECBT1H101KB5	100P 50V [M]
C701	ECBT1H104ZF5	0.1 50V [M]
C702	ECBT1H104ZF5	0.1 50V [M]
C703	ECEA1CU472E	4700 16V [M]
C704	ECBT1E103ZF5	0.01 25V [M]
C705	ECEA1CKA100B	10 16V [M]
C706	ECBT1E103ZF5	0.01 25V [M]
C707	ECEA1VU102E	1000 35V [M]
C708	ECKR1H103ZF5	0.01 50V [M]
C709	ECEA1CKA220B	22 16V [M]
C710	ECA1VM471E	470 35V [M]
C711	ECKR1H103ZF5	0.01 50V [M]
C712	ECEA1CKA100B	10 16V [M]
C713	ECEA1CKA100B	10 16V [M]
C714	ECEA1VU101B	100 35V [M]
C715	ECA1JM101B	100 63V [M]
C716	ECKR1H103ZF5	0.01 50V [M]
C717	ECEA1VKA100B	10 35V [M]
C718	ECBT1E103ZF5	0.01 25V [M]
C719	ECEA0JKA470B	47 6.3V [M]
C720	ECEA0JKA470B	47 6.3V [M]
C721	ECEA1VKA100B	10 35V [M]
C722	ECBT1E103ZF5	0.01 25V [M]

Ref No.	Part No.	Values & Remarks
C723	ECBT1H104ZF5	0.1 50V [M]
C724	ECA1CM221B	220 16V [M]
C901	ECBT1H104ZF5	0.1 50V [M]
C902	ECEA0JKA101B	100 6.3V [M]
C903	ECBT1E103ZF5	0.01 25V [M]
C904	ECEA0JKA101B	100 6.3V [M]
C905	ECBT1H331KB5	330P 50V [M]
C906	ECBT1H331KB5	330P 50V [M]
C907	ECBT1H331KB5	330P 50V [M]
C908	ECBT1H331KB5	330P 50V [M]
C909	ECBT1H331KB5	330P 50V [M]
C910	ECBT1H331KB5	330P 50V [M]
C911	ECBT1H331KB5	330P 50V [M]
C912	ECBT1H331KB5	330P 50V [M]
C913	ECBT1H331KB5	330P 50V [M]
C914	ECBT1H331KB5	330P 50V [M]
C915	ECEA1HKA010B	1 50V [M]
C916	ECEA1HKA010B	1 50V [M]
C917	ECBT1E103ZF5	0.01 25V [M]
C918	ECBT1E103ZF5	0.01 25V [M]
C919	ECBT1H101KB5	100P 50V [M]
C920	ECBT1H101KB5	100P 50V [M]
C921	ECEA1CKA100B	10 16V [M]
C922	ECEA1VKA220B	22 35V [M]
C923	ECEA1VKA220B	22 35V [M]
C924	ECEA1VKA220B	22 35V [M]
C925	ECEA1VKA220B	22 35V [M]
C926	ECBT1E103ZF5	0.01 25V [M]
C927	ECBT1E103ZF5	0.01 25V [M]
C928	ECBT1H104ZF5	0.1 50V [M]
C931	ECBT1E103ZF5	0.01 25V [M]

■ Packaging (Refer to page 20 for the Parts List.)



ACCESSORY

P4 (SPSD152)	: ACCESSORY BOX
A1 (EUR644378)	: REMOTE CONTROL UNIT
A2 (RJA0019-2A ... E/EG)	: AC CORD
A2 (RJA0038-U ... EB)	: AC CORD
A3 (RJL1P021B08)	: IP CORD
A4 (RJL2P004B08)	: STEREO CABLE
A5 (RFKSAC300EK ... E)	: O/I BOOK ASS'Y
A5 (RFKSAC300EGK ...EG)	: O/I BOOK ASS'Y
A5 (RQT3952-B...EB)	: O/I BOOK
A6 (SJP2281)	: OPTICAL CABLE

P2 (RPN1058)
- *P2 (A)
- *P2 (B)
- *P2 (C)
- *P2 (D)

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